DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	WEBSTER LAKE	Lake Area (ha):	247.75
Town:	FRANKLIN	Maximum depth (m):	11.8
County:	Merrimack	Mean depth (m):	5.5
River Basin:	Merrimack	Volume (m^3):	13586500
Latitude:	43°28'10" N	Relative depth:	0.7
Longitude:	71°41'11" W	Shore configuration:	1.24
Elevation (ft):	401	Areal water load (m/yr):	8.32
Shore length (m):	6900	Flushing rate (yr^{-1}):	1.50
Watershed area (ha):	4506.6	P retention coeff.:	0.58
% watershed ponded:	2.0	Lake type:	natural w/dam

BIOLOGICAL:		19 January 1994	2 July 1993
DOM. PHYTOPLANKTON (% TOTAL)	#1	NO PHYTOPLANKTON	TABELLARIA 35%
	#2	RESULTS	
	#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)			1105
CHLOROPHYLL-A (µg/L)			2.70
DOM. ZOOPLANKTON (% TOTAL)	#1	NO ZOOPLANKTON	NO ZOOPLANKTON
	#2	RESULTS	RESULTS
	#3		
ROTIFERS/LITER			
MICROCRUSTACEA/LITER			
ZOOPLANKTON ABUNDANCE (#/L)			
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			4.9
BOTTOM DISSOLVED OXYGEN (mg/L)		9.5	1.3
BACTERIA (E. coli, #/100 ml)	#1		1
	#2		< 1
	#3		59

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 4.0
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : None

CHEMICAL: **Lake: WEBSTER LAKE**
Town: FRANKLIN

	19 January 1994		2 July 1993		
DEPTH (m)	3.0	8.0	1.0	6.0	11.0
pH (units)	6.4	6.3	7.2	6.9	6.4
A.N.C. (Alkalinity)	6.5	6.7	5.6	5.6	7.6
NITRATE NITROGEN	0.03	0.03	< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.20	0.20	0.14	0.45	0.45
TOTAL PHOSPHORUS	0.010	0.013	0.012	0.012	0.034
CONDUCTIVITY (µmhos/cm)	53.0	54.9	47.0	47.4	50.6
APPARENT COLOR (cpu)	12	13	7	9	20
MAGNESIUM			0.73		
CALCIUM			2.3		
SODIUM			5.0		
POTASSIUM			0.65		
CHLORIDE	8	8	7		7
SULFATE	5	5	4		5
TN : TP	23	18	12		13
CALCITE SATURATION INDEX			3.0		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1993

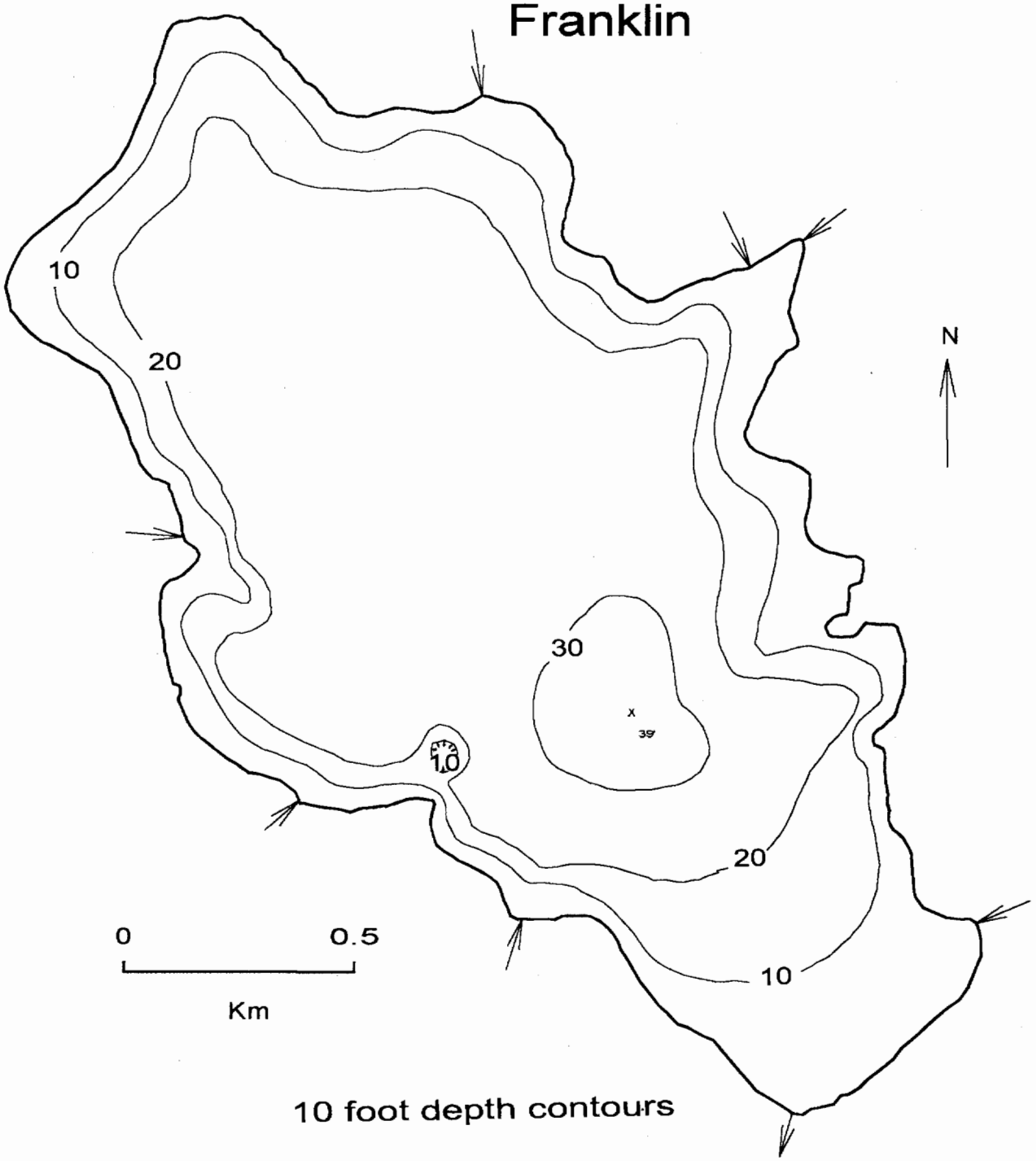
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	1	0	3	Oligo.

COMMENTS:

1. This lake was previously surveyed and classified in 1979, and an in-depth year-long diagnostic study was conducted in 1988. The lake was classified "mesotrophic" in both 1979 and 1988. In all three years the lake was borderline oligotrophic/mesotrophic, where relatively small changes in water quality can affect the assigned classification. There was no dramatic change in water quality through the years, but certainly the trend is in the right direction. Watershed controls implemented as a result of the 1988 study may now be beneficially affecting the lake.

2. The wholewater phytoplankton was dominated by Aphanocapsa (40%) and Chroomonas (30%).

Webster Lake
Franklin



10 foot depth contours

FIELD DATA SHEET

LAKE: WEBSTER LAKE
DATE: 07/02/93

TOWN: FRANKLIN
WEATHER: PARTLY CLOUDY; BREEZY & WARM

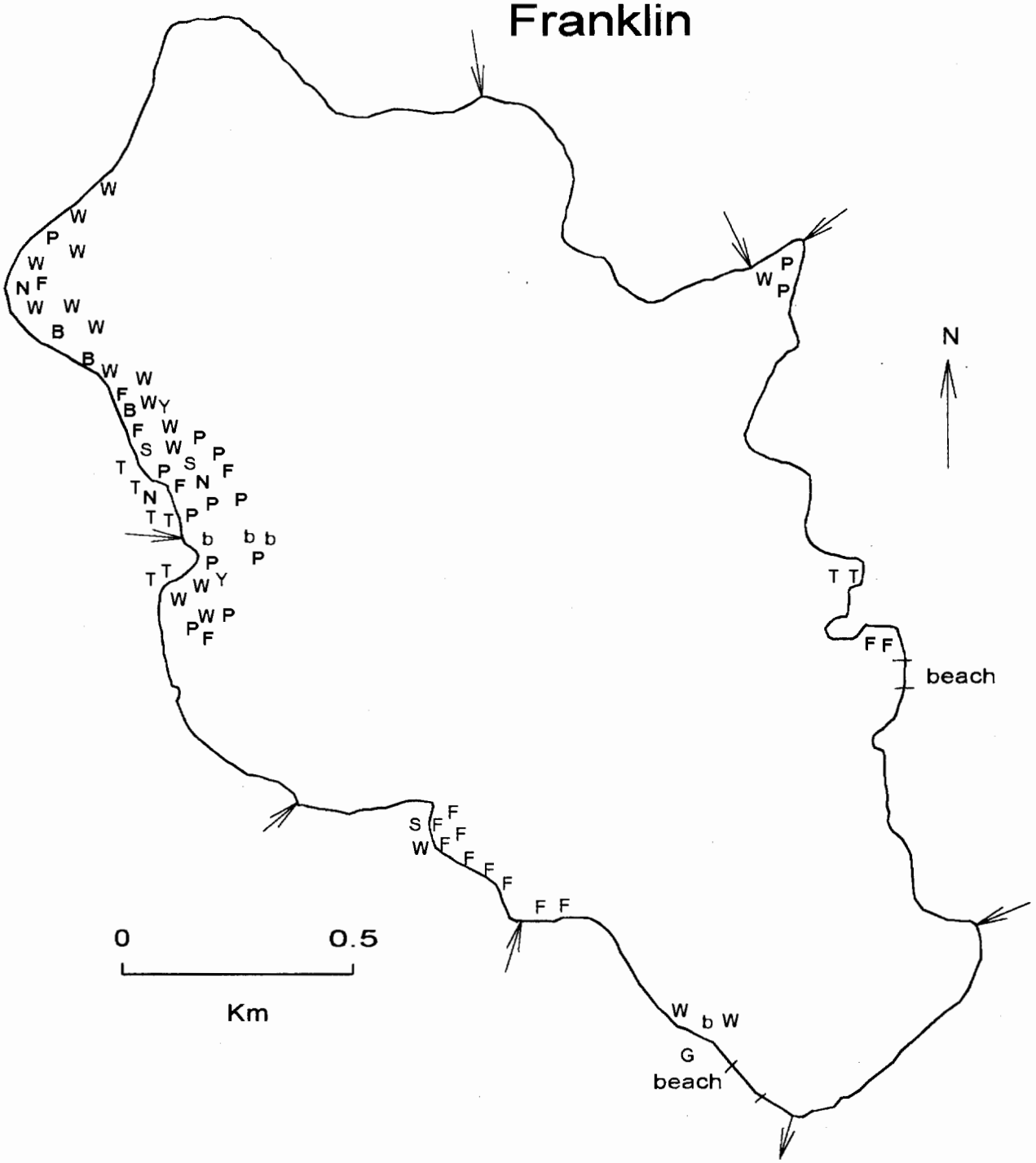
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	22.5	9.1	104 %
	1.0	22.5	8.9	100 %
	2.0	22.5	9.0	103 %
	3.0	22.0	9.1	104 %
	4.0	20.5	9.3	102 %
	5.0	19.0	8.6	92 %
	6.0	18.0	7.7	80 %
	7.0	18.0	6.4	67 %
	8.0	17.0	5.4	55 %
	9.0	17.0	4.2	43 %
	10.0	16.0	3.1	31 %
	11.0	15.0	1.3	13 %

SECCHI DISK (m): 4.9
BOTTOM DEPTH (m): 11.5
TIME: 1230

COMMENTS:

*Dissolved oxygen values are in mg/L

Webster Lake
Franklin



AQUATIC PLANT SURVEY

LAKE: WEBSTER LAKE TOWN: FRANKLIN DATE: 07/02/93

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
F	Nymphoides cordatum	Floating heart	Scattered
T	Typha	Cattail	Sparse
P	Pontederia cordata	Pickerelweed	Sparse
W	Potamogeton	Pondweed	Scattered
N	Nymphaea	White water lily	Sparse
S	Sparganium	Bur reed	Sparse
Y	Nuphar	Yellow water lily	Sparse
b	Scirpus	Bulrush	Sparse
G	Gramineae	Grass family	Sparse

OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

1. Plants appeared to be somewhat more abundant in 1993 as compared to 1979. The plants near the Sucker Brook inlet now extend to the northwestern shore.

2. Most plant growth was located along the western shoreline.